

# IRRITABLE BOWEL SYNDROME (IBS)

Irritable bowel syndrome (IBS) is influenced by many factors—neurological, immunological, psychological, and likely others. The following offers evidence-based suggestions for a Whole Health approach to IBS, recognizing that no one intervention is effective or curative for everyone; pharmaceuticals are no exception. Successfully treating IBS requires one to approach this complex and dynamic interplay on a *case-by-case* basis. A continuous therapeutic relationship is essential. Because of the lack of consistent effectiveness of pharmaceuticals, nearly 40% of those with IBS turn to other therapeutic options.[1] These are discussed below.

IBS is an alarmingly common condition in the U.S. military population, with estimates of up to one-third of military women having this syndrome.[2] Rates in men have not been well characterized in the military population but are thought to be much lower. Women, specifically, experience a considerable decrease in quality of life due to this condition, making effective treatment a high priority.[3]

IBS is often associated with comorbidities, including posttraumatic stress disorder (PTSD), depression, and anxiety.[4] A history of sexual trauma is even more strongly associated with IBS than any mood disorder.[2] IBS is also more common in those who have suffered some sort of “hit” that throws the ecosystem of their GI tract out of balance. Examples include infections (e.g., traveler’s diarrhea), medication use (antibiotics, steroids, chemotherapy), and significant emotional stressors. A clinician should address potential chronic sequelae of these “hits” to determine how to best bring this dynamic ecosystem back into balance.[5]

Research for the [Circle of Health](#) items as they relate to IBS is summarized below.

## MOVING THE BODY

Regular physical activity has a positive impact on nearly all diseases, especially those with a strong mind-body component. The positive effect of movement on IBS symptoms likely stems from the stress-relieving and bowel motility benefits it confers. Mild physical exercise has been found to increase gas clearance and reduce bloating.[6] Women who are more physically active tend to have fewer and less severe IBS symptoms.[7] One small randomized controlled trial showed that increasing physical activity had symptomatic benefits in those with constipation-predominant IBS.[8]

## YOGA

Several studies have shown positive results with various types of yoga, particularly pranayama, a form of yoga that focuses on the breath. Pranayama breathing stimulates the parasympathetic autonomic system, which mediates relaxation of intestinal spasm through the vagus nerve. A 2-month study showed that twice-daily yoga was equivalent to loperamide in those with diarrhea-predominant IBS symptoms.[9]

Keys to starting an exercise program include empowering patients to be active participants in managing their illness and finding activities that they enjoy. Start slowly. Encourage group programs that enhance social support. Find activities that cause people to break a sweat for 25-50 minutes a day most days of the week.

## FOOD AND DRINK

### ELIMINATION DIETS

Given that food allergies and intolerances are often associated with exacerbations in IBS symptoms, individuals often find relief through eliminating specific foods from their diets. True histamine-mediated food allergies are widely tested by examining IgE reactions, while IgG testing for food intolerances is much more controversial. However, several well-controlled studies have shown that people who based an elimination diet on IgG results improved more than those who eliminated random foods.[10,11] Several years later, many of these individuals remained minimally symptomatic. Most believed that the addition of probiotics was much less helpful than an elimination diet.[11] However, elimination diets, used without other interventions, are only effective for 25%-30% of those with IBS.

[Elimination Diets](#) are only one of several interventions to consider.[12]

The section below lists foods to consider eliminating. Eliminating FODMAPs (fermentable sugars; oligo-, di-, and monosaccharides; and polyol sweeteners) may have the strongest scientific support. Gibson and colleagues found that avoiding foods containing these carbohydrates led to relief in 75% of those with IBS.[13] These foods all contain short-chain carbohydrates of varying lengths that are often incompletely absorbed by the GI tract. By remaining present in the GI tract rather than being absorbed, these carbohydrates are vulnerable to fermentation by enteric bacteria, producing gas and abdominal distention. People with IBS often have visceral hypersensitivity, so limiting abdominal distention may be the mechanism for symptom relief. For more information, refer to "[The FODMAP Diet](#)."

### FOODS TO CONSIDER ELIMINATING

- Gluten/wheat
- Eggs
- Fermentable sugars; oligo-, di-, monosaccharides; and polyol sweeteners
- Lactose (milk, ice cream, yogurt)
- Sugar substitutes (mannitol, sorbitol, xylitol)
- Fructose (high-fructose corn syrup, honey, dates, oranges, cherries, apples, pears)
- Lamb
- Gas-producing foods (beans, peas, broccoli, cabbage, bran)
- Bananas
- Corn
- Potatoes
- Coffee

- Nuts
- Shellfish
- Soybeans
- Beef
- Pork

## FIBER

Fiber maintains a healthy intestinal mucous layer, acts as a prebiotic (a “food” for probiotic bacteria), and lowers cholesterol. It undergoes fermentation in the colon, leading to gas and short-chain fatty acid production. These characteristics likely improve stool frequency and consistency in those with IBS, but overall, results of studies focused on fiber and IBS are quite mixed.[14] Whether fiber is insoluble or soluble, however, seems to make a difference. Several studies have shown that insoluble fiber (i.e., bran) often worsens symptoms, though this may be due in part to inadequate increases in fluid intake. Other studies show that soluble fiber, at least for those with constipation-type IBD, may be modestly effective.[9,15-19] Good examples of soluble fiber include guar gum (5-10 grams per day), ground flaxseed (1 tablespoon once or twice per day), and psyllium husk (1 tablespoon in 8 ounces of water twice per day). As a general principle, start fiber at low doses, increase slowly, and allow time for an adequate trial (1-2 months).

## POWER OF THE MIND

Our GI system is often referred to as our “second brain,” because it rivals the brain in terms of numbers of neural connections and volume of neurotransmitters. However, it may be most useful to consider the brain and GI nervous system as a *single* unit, given how entwined they are. Their relationship is mediated by the autonomic nervous system, hypothalamic-pituitary axis, and the immune system. Problematic thoughts and emotions can manifest as abdominal pain, bloating, and spasms. This interplay has given rise to many common metaphors, such as “I have butterflies in my stomach.” It is worth listening for such statements as clues to how best to work with people with IBS.

Individuals with IBS have increased perception of stress, and this can chronically affect their symptoms. Furthermore, IBS sufferers are hyper-vigilant regarding body sensations.[20] The power of the mind can be used as a therapeutic tool for IBS in the following ways:

## HYPNOTHERAPY

Hypnotherapy is a method of deliberately using verbal cues to induce an altered state of awareness for a targeted therapeutic indication. These verbal cues can enhance relaxation, the ability to generate imagery, and focus. Evidence supports the use of either gut-directed hypnotherapy (GDH) or audiotape hypnotherapy, and one trial found these to be equally effective for IBS with response rates of 50%-75%.[21] GDH is more resource intensive than a self-directed audiotape, requiring 8-12 sessions that are ½ to 1 hour long. Two meta-

analyses showed that hypnotherapy seems to have consistent positive effects on IBS, with an estimated 50% improvement in bowel symptoms, psychological distress, and quality of life that lasted over a year after treatment was completed.[22,23] In refractory cases referred to a GI clinic, an uncontrolled prospective study of 204 individuals found that 81% received benefit; 71% of these continued to have benefits 5 years later.[24] Although larger randomized trials need to be done to verify the effectiveness of hypnotherapy, its safety and potential benefit makes it a worthwhile therapeutic option.

For self-guided hypnosis audio resources, visit <http://www.healthjourneys.com>. For a copy of a script you can use for yourself or with patients to ease abdominal pain, refer to the clinical tool, [Balloon Self-Hypnosis Technique for IBS and Abdominal Pain: A Guide for Clinicians](#).

### **COGNITIVE BEHAVIORAL THERAPY (CBT)**

CBT focuses on identifying behaviors and thought patterns, as well as negative emotions that hinder progress toward one's self-defined goals. IBS studies show mixed results, but there is some suggestion that CBT improves symptoms more than pharmaceutical care alone.[20] In one of the largest studies to date, those receiving 12 weeks of CBT versus education had response rates of 70% and 37%, respectively.[25]

### **BRIEF PSYCHODYNAMIC PSYCHOTHERAPY**

This insight-oriented talk therapy focuses on discussions of symptoms, emotions, and the mind-body connection. It has been used extensively in the United Kingdom. Two large studies have yielded positive results. The largest of these included 257 individuals and had control groups that included paroxetine as well as standard medical care. Both the psychotherapy group and the paroxetine group had similar improvements in quality of life, but the psychotherapy group had lower health care costs.[25]

### **MEDITATION**

Meditation can be done in many ways, and the goal of all of them is to focus one's attention. Given the role of maladaptive stress in those with IBS, it makes sense that altering one's stress response through meditation can be beneficial. However, to date, no controlled studies have been done. Research does suggest that people with GI symptoms who attend a Mindfulness-Based Stress Reduction (MBSR) course have a reduction of symptoms.[20,26] Given the multitude of confirmed and suspected health benefits of meditation, this very safe intervention should be considered in those with IBS.

*A note on the placebo response:* Therapeutic trials on IBS have larger than expected placebo response rates, emphasizing the primary role of the mind-body relationship in this disorder. Placebos can be viewed as proactive healing mechanisms that are stimulated through social support, positive expectation, and hope. One meta-analysis estimates a 40%-50% response rate to these important components of Whole Health.[27,28] Factors associated with higher placebo response rates include longer treatment duration, more

office visits, and the overall treatment effect of the agent with which the placebo is being compared.[29] Given that positive expectations about treatments can be greatly enhanced by therapeutic patient-practitioner relationships, building trust and instilling hope should be key ingredients in any Personal Health Plan for someone with IBS.

## DIETARY SUPPLEMENTS

**Note:** Please refer to the [Passport to Whole Health](#), Chapter 15 on Dietary Supplements for more information about how to determine whether or not a specific supplement is appropriate for a given individual. Supplements are not regulated with the same degree of oversight as medications, and it is important that clinicians keep this in mind. Products vary greatly in terms of accuracy of labeling, presence of adulterants, and the legitimacy of claims made by the manufacturer.

### PEPPERMINT OIL

Peppermint is one of the most commonly used supplements for IBS. Its main active ingredient is menthol, an antispasmodic. It works best to treat spasms that lead to abdominal pain as opposed to treating distention and flatulence. It has also been shown to improve diarrhea, constipation, urgency, and incomplete defecation.[30] One systemic review showed response rates in those using peppermint oil of 79% for abdominal pain, 83% for abdominal distention, and 73% for flatulence.[31] These findings are as good as those for pharmaceuticals—if not better—and peppermint oil has fewer side effects.

One common side effect of peppermint is heartburn because it also relaxes the lower esophageal sphincter. Peppermint should be used with caution in those with gastroesophageal reflux disease (GERD). Using an enteric-coated preparation may allow release of the peppermint more distally in the GI tract. Most quality products have at least 44% menthol and less than 1% pulegone (a neuro- and hepatotoxin).[32] A common dose is 0.2 to 0.4 mL three times daily of enteric-coated capsules. Adverse effects are rare.

### PROBIOTICS

Increased intestinal permeability seems to be a fundamental problem in IBS. Intestinal bacteria directly interact with the intestinal wall to influence how easy or difficult it is for larger molecules to be absorbed from the gut into the bloodstream. An intestine that is too permeable allows macromolecules into the bloodstream, where they are more likely to trigger an immune response than smaller compounds. As macrophages, antibodies, and cytokines are mobilized, food intolerances and IBS symptoms can develop.

Probiotics may offer benefit in many ways, including healing the gut mucosal barrier, improving intestinal flora, altering one's immune response, decreasing inflammation, and/or altering fermentation in the intestinal tract. Many studies investigating a wide range of bacterial strains have been performed, and the most positive studies have shown the specific strain *Bifidobacterium infantis* (*B. infantis*) 35624 at a dose of  $10^8$  colony-

forming units (CFUs) to be the most effective.[33,34] Some studies also show some promise for *Lactobacillus*-containing species.[35]

In one meta-analysis, the number of people who needed to be treated (NNT) with probiotics to have one person experience improvement was found to be as low as four, an extremely low NNT related to any therapy for IBS or for other disorders.[36] Probiotics have significant favorable effects on abdominal pain, bloating, and bowel movement difficulty.[14]

## **IBEROGAST (STW 5)**

This product, originally from Germany, is a combination of extracts from nine different herbs. It has been studied for several functional GI disorders. Its contents include the following:

- Bitter candytuft (*Iberis amara*) also known as clown's mustard
- Angelica root (*Angelica archangelica*)
- Milk thistle fruit (*Silybum marianum*)
- Celandine aerial parts (*Chelidonium majus*)
- Caraway fruit (*Carum carvi*)
- Licorice root (*Glycyrrhiza glabra*)
- Peppermint leaf (*Menthae piperitae*)
- Lemon balm leaf (*Melissae officinalis*)
- Chamomile flower (*Matricaria recutita*)

Several studies have shown a benefit over placebo for abdominal pain.[37] The constituents of this product have properties that alter GI motility, and many of them also have anti-inflammatory properties. Its varied mechanisms of action likely explain its wide-ranging effectiveness.[38]

## **MELATONIN**

Melatonin is best known as a circadian rhythm modulator, but levels are several-fold higher in the gut than the brain. Melatonin has been shown in one randomized controlled trial to improve abdominal pain and overall quality of life without affecting other symptoms.[30] It would appear that a healthy sleep-wake cycle supports the health of the GI tract.

## **OTHER HEALING SYSTEMS**

### **ACUPUNCTURE**

Randomized controlled studies have not shown a clear benefit of acupuncture in reducing symptoms or severity or in improving quality of life. However, a few Chinese trials have shown that acupuncture may be more beneficial than antispasmodic medications. It may be that individuals who prefer acupuncture as a treatment modality, or have greater

expectations of improvement with acupuncture, will benefit more from acupuncture than medications.[39,40] In many studies, quality of life improves in both treatment and sham acupuncture groups. Given that acupuncture has a favorable benefit-to-risk ratio, it may be worth considering, though cost and accessibility must also be taken into account.[41]

## SUMMARY OF NON-PHARMACEUTICAL OPTIONS FOR IBS

To receive an “A” rating, based on the Strength of Recommendation Taxonomy (SORT) criteria, a therapy needs to be supported by a systematic review or meta-analysis showing benefit, a Cochrane review with clear recommendation, or a high-quality, patient-oriented randomized controlled trial.

The following therapies are supported by consistent, good-quality, and patient-oriented evidence and would receive an “A” rating:

- **Hypnosis** by a certified practitioner; if not available, self-hypnosis techniques may be an option
- **Cognitive behavioral therapy** through health psychology referral; consider journaling if not available
- **Probiotics:** *B. infantis* 35624 (brand name: Align); if not available, consider other *Bifidobacterium* and/or *Lactobacillus* species

The following therapies are supported by inconsistent or limited-quality patient-oriented evidence and would receive a “B” rating:

- **Elimination diet:** must be individualized; consider FODMaP diet
- **Soluble fiber:** ground flaxseed, 1 tablespoon twice daily; guar gum, 5 grams daily; psyllium, 1 tablespoon in 8 ounces water twice daily
- **Peppermint:** 0.2-0.4 mL enteric-coated capsules three or four times daily
- **Iberogast (STW 5):** 20 drops three times daily (before/with meals)
- **Brief psychodynamic psychotherapy** through a health psychology referral

The following therapies are supported by consensus, usual practice, opinion, disease-oriented evidence or case series and would receive a “C” rating:

- **Meditation:** Mindfulness-Based Stress Reduction course; consider other forms of relaxation therapies as available (guided imagery, progressive muscle relaxation, breathing exercises)
- **Acupuncture:** certified practitioner; consider only recommending to those with positive expectations
- **Melatonin:** 3-6 mg 30 minutes before bedtime (higher doses than for circadian sleep disturbances)
- **Physical activity:** vigorous activity 30 minutes or more on most days of the week; consider yoga



## AUTHOR(S)

“Irritable Bowel Syndrome” was written by [David Lessens](#), MD, MPH (2014). Sections of this Whole Health tool were adapted from “[An Integrative Approach for Treating Irritable Bowel Syndrome](#)” by [David Rakel](#), MD.

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